

Claims

1. A fluid-operated percussion drill tool, in particular a down-the-hole hammer, comprising an external cylindrical outer wear sleeve (10), an inner cylinder (9) mounted co-axially within the outer wear sleeve (10), a sliding piston (11) mounted for reciprocating movement within the inner cylinder (9) and the outer wear sleeve (10), to strike a hammer bit (36) mounted at the lower end of the outer wear sleeve (10), characterised in that the inner cylinder (9) has an abutment (15) which in the assembled tool is clamped between a complementary engagement means (38) and a locking means (2) such that the inner cylinder (9) is rigidly mounted and held in the drill tool assembly relative to the outer wear sleeve (10).
2. A fluid-operated percussion drill tool as claimed in claim 1, characterised in that the top end of the outer wear sleeve (10) is screw-threadably engaged with the lower end of an annular air distributor mount (2), the top end of the inner cylinder (9) abuts the lower end of the distributor mount (2), a lower end of the air distributor (3) abuts a shoulder (15) in the inner cylinder (9) and is threadably engaged at its upper end with a top locking member (1) which in its locked position abuts the top of the air distributor mount (2).
3. A tool as claimed in claim 1, characterised in that there is an elongate cylindrical air distributor (3) positioned within the hammer assembly and an abutment (15) on the inner cylinder (9) engages with a complementary abutment (38) on the air distributor (3) and locking means (2) connected to the outer wear sleeve (10) are provided to clamp the abutment (15) between the abutment (38) on the air distributor (3), and the locking means is such that the inner cylinder (9) is rigidly mounted in the drill assembly relative to the outer wear sleeve (10).
4. A tool as claimed in claim 1 or claim 3, characterised in that the locking means comprises an annular air distributor mount (2) the lower end of which is screw-threadably engaged with the top end of the outer wear sleeve (10).

5. A tool as claimed in claim 4 characterised in that the air distributor (3) is threadably engaged at its upper end with a top locking member (1) which abuts the top of the air distributor mount (2).
- 5 6. A tool as claimed in any of the preceding claims characterised in that the inner cylinder (9) is formed with an inwardly directed abutment which is clamped between the complementary engagement means (38) and the locking means (2).
- 10 7. A tool as claimed in any one of the preceding claims characterised in that it comprises a top locking member (1) screw threadably mounted on an annular air-distributor 3, which is fitted concentrically through an inner cylinder (9) and an annular distributor mount (2), and an annular flange (38) on the lower end of the air-distributor (3) abuts the underside of an inwardly-directed abutment (15) in inner cylinder (9), and a top end (14) of the inner cylinder (9) abuts a lower end of 15 the distributor mount (2) whereby the inner cylinder (9) is locked in position.
- 20 8. A tool as claimed in claim 7, characterised in that the top end of the inner cylinder (9) comprises an annular shoulder or flange (14) which is rigidly held between an annular flange (38) on the lower end of air-distributor (3) which abuts an annular shoulder (15) of the inner cylinder (9), and the lower end of the distributor mount (2).
- 25 9. A tool as claimed in any one of claims 2 to 8, characterised in that the bottom of the top locking member (1) has a flat annular rim (12) which engages a complementary flat shoulder (13) on the top end of the distributor mount (2).
- 30 10. A tool as claimed in any one of claims 2 to 9 characterised in that downward movement of the top locking member 1 against the distributor mount (2) is controlled by means of a stop (51) on the air-distributor (3).
11. A tool as claimed in claim 10 characterised in that the stop is provided by means of an annular surface (51) on the top of the air-distributor 3 which engages with an

annular shoulder (50) on the inner surface of the top locking member (1).

12. A tool as claimed in claim 11, characterised in that a compression ring is positioned between the annular surface (51) and the annular shoulder (50).